In the Claims

Applicant has submitted a new complete claim set showing marked up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Please cancel claims 21, 22, 27-35, 37, 39-45, 50, 53 and 54 without prejudice or disclaimer.

Please amend pending claims 23, 26, 36, 46, 49 and 51 as noted below.

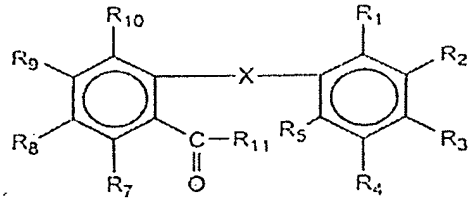
1-22. Canceled.

23. (Currently amended) A method for inhibiting calcium channel activity in a cell having a calcium channel comprising:

contacting the cell having the calcium channel with a compound in an amount effective to inhibit calcium channels,

wherein the compound has the general structural formula:

~~The method of claim 21, wherein the compound has the general structural formula:~~



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -

C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, or -C(S)C(S)N(R')$_2$;

wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$, -NH-CH_2CH_2N-$(CH_2)_z$-H, -N•$(CH_2)_2$N R_{15}.$(CH_2)_2$, -R', -OR', -SR', -NO_2, -N(R')$_2$, -CO-R', -CS-R', -CO-OR', -CS-OR', -CO-SR', -CS-SR', -CO-N(R')$_2$, and -CS-N(R')$_2$;

wherein each R' is $(CH_2)_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20}) aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, or an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

wherein X is a group having the following formula;

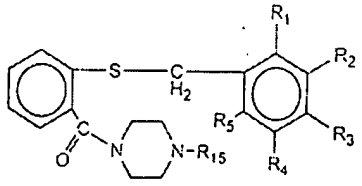
$-(CH_2)_m$-Y-$(CH_2)_n$-

wherein Y is selected from the group consisting of S, N, and O; and

wherein m and n, independent of one another, are integers of 0-5.

24. (Original) The method of claim 23, wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$ and -NH-CH_2CH_2N-$(CH_2)_z$-H and wherein Y is S, m is 0 and n is 1-4.

25. (Original) The method of claim 24, wherein the compound has the general structural formula:



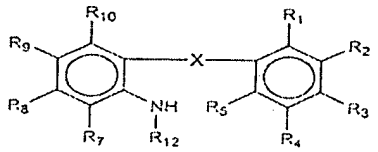
wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy.

26. (Currently amended) A method for inhibiting calcium channel activity in a cell having a calcium channel comprising:

contacting the cell having the calcium channel with a compound in an amount effective to inhibit calcium channels,

wherein the compound has the general structural formula:

~~The method of claim 21, wherein the compound has the general structural formula:~~



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, or -C(S)C(S)N(R')$_2$;

wherein R_{12} is selected from the group consisting of -CO-NH-$CH_2CH_2NH_2$, -CO-NH-CH_2CH_2N-$(CH_2)_z$-H, and -CO -N•$(CH_2)_2$N R_{15}•$(CH_2)_2$[.];

wherein each R' is $(CH_2)_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20}) aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, or an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

wherein X is a group having the following formula;

$-(CH_2)_m-Y-(CH_2)_n-$

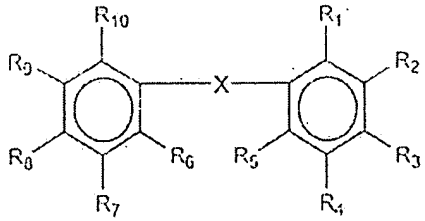
wherein Y is selected from the group consisting of S, N, and O; and

wherein m and n, independent of one another, are integers of 0-5.

27-35. Canceled.

36. (Currently amended) ~~The method of claim 35, wherein the medicament is for treating hypertension.~~A method of treating a subject having a disorder associated with calcium channel activity comprising:

administering to the subject having the disorder associated with calcium channel activity a compound in an amount effective to inhibit calcium channels in the subject and a pharmaceutically acceptable carrier, wherein the compound has the general structural formula:



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy -CN, -OR', -SR', $-NO_2$, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', $-C(O)N(R')_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', $-C(O)C(O)N(R')_2$, $-C(S)C(O)N(R')_2$, $-C(O)C(S)N(R')_2$, or $-C(S)C(S)N(R')_2$;

wherein R_6 is in the ortho position and is selected from the group consisting of $-CO-NH-(CH_2)_{2-5}NH_2$, $-CO-NH-(CH_2)_{2-5}NH-(CH_2)_z-H$, $-CO-NH(CH_2)_{2-5}NR_{15}(CH_2)_z-H$, -CO-R', -CO-

OR', -CO-SR', -CO-N(R')$_2$, -CO-CO-R', -CO-CS-R', -CO-CO-OR', -CO-CS-OR', -CO-CO-SR', -CO-CS-SR', -CO-CO-N(R')$_2$, -CO-CS-N(R')$_2$, -NH-CO-NH-(CH$_2$)$_{2-5}$NH$_2$, -NH-CO-NH-(CH$_2$)$_{2-5}$NH-(CH$_2$)$_z$-H, -NH-CO-NH(CH$_2$)$_{2-5}$NR$_{15}$(CH$_2$)$_z$-H, -NH-CO-R', -NH-CO-OR', -NH-CO-SR', -NH-CO-NO$_2$, -NH-CO-N(R')$_2$, -NH-CO-CO-R', -NH-CO-CS-R', -NH-CO-CO-OR', -NH-CO-CS-OR', -NH-CO-CO-SR', -NH-CO-CS-SR', -NH-CO-CO-N(R')$_2$, and -NH-CO-CS-N(R')$_2$,

wherein each R' is (CH$_2$)$_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C$_1$-C$_6$) alkyl, (C$_1$-C$_6$) alkenyl, (C$_1$-C$_6$) alkoxy, (C$_1$-C$_6$) alkynyl, (C$_6$-C$_{20}$) aryl, (C$_6$-C$_{20}$) substituted aryl, (C$_6$-C$_{26}$) alkaryl, substituted (C$_6$-C$_{26}$) alkaryl, and (C$_5$-C$_7$) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, or an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C$_1$-C$_6$) alkyl, (C$_1$-C$_6$) alkenyl, (C$_1$-C$_6$) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R$_{15}$ is selected from the group consisting of halogen, (C$_1$-C$_6$) alkyl, (C$_1$-C$_6$) alkenyl, (C$_1$-C$_6$) alkynyl, and (C$_1$-C$_6$) alkoxy;

wherein X is a group having the following formula;

-(CH$_2$)$_m$-Y-(CH$_2$)$_n$-

wherein Y is selected from the group consisting of S, N, and O;

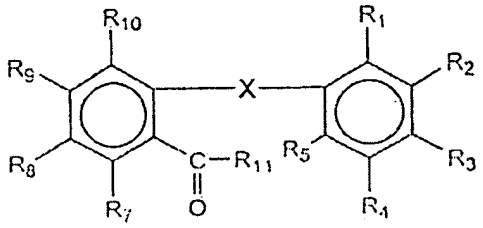
wherein m and n, independent of one another, are integers of 0-5; and

administering to the subject a medicament other than the compound, in an amount effective to treat hypertension.

37-45. Canceled.

46. (Currently amended) A kit comprising:

a package housing a container containing a compound to inhibit calcium channels and a pharmaceutically acceptable carrier, wherein the compound has the general structural formula:



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy, -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, and -C(S)C(S)N(R')$_2$;

wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$, -NH-CH_2CH_2N-$(CH_2)_z$-H, -N•$(CH_2)_2$N R_{15}•$(CH_2)_2$, -R', -OR', -SR', -NO_2, -N(R')$_2$, -CO-R', -CS-R', -CO-OR', -CS-OR', -CO-SR', -CS-SR', -CO-N(R')$_2$, and -CS-N(R')$_2$;

wherein each R' is $(CH_2)_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20}) aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, and an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

wherein X is a group having the following formula;

$$-(CH_2)_m-Y-(CH_2)_n-$$

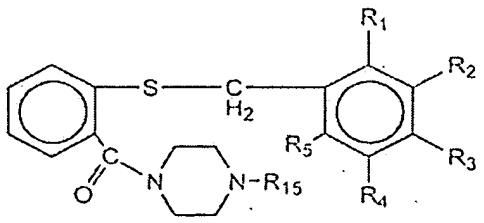
wherein Y is selected from the group consisting of S, N, and O;

wherein m and n, independent of one another, are integers of 0-5; and,

instructions for using the compound to treat a subject having a calcium channel blocking disorder.

47. (Original) The kit of claim 46, wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$ and -NH-CH_2CH_2N-$(CH_2)_z$-H and wherein Y is S, m is 0 and n is 1-4.

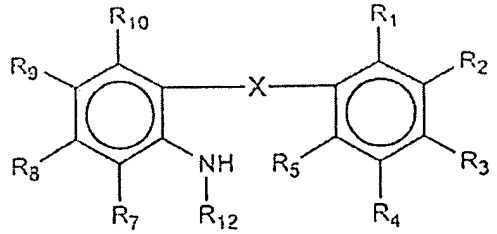
48. (Original) The kit of claim 46, wherein the compound has the general structural formula:



wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy.

49. (Currently amended) ~~The kit of claim 44, wherein the compound has the general structural formula:~~ A kit comprising:

a package housing a container containing a compound to inhibit calcium channels and a pharmaceutically acceptable carrier, wherein the compound has the general structural formula:



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy, -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -

C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, and -C(S)C(S)N(R')$_2$;

_____wherein R_{12} is selected from the group consisting of -CO-NH-$CH_2CH_2NH_2$, -CO-NH-CH_2CH_2N-$(CH_2)_z$-H, and -CO -N•$(CH_2)_2$N R_{15}•$(CH_2)_2$;

wherein each R' is $(CH_2)_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20}) aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, and an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

wherein X is a group having the following formula;

$-(CH_2)_m$-Y-$(CH_2)_n$-

wherein Y is selected from the group consisting of S, N, and O;

wherein m and n, independent of one another, are integers of 0-5; and

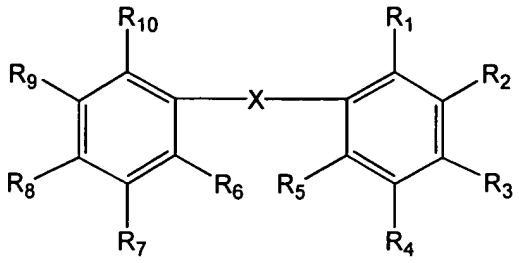
instructions for using the compound to treat a subject having a calcium channel blocking disorder.

50. Canceled.

51. (Currently amended)~~The kit of claim 50, wherein the medicament for the treatment of the cardiovascular disease is a medicament for the treatment of hypertension.~~

A kit comprising:

a package housing a container containing a compound to inhibit calcium channels and a pharmaceutically acceptable carrier, wherein the compound has the general structural formula:



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy, -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, and -C(S)C(S)N(R')$_2$;

wherein R_6 is in the ortho position and is selected from the group consisting of -CO-NH-(CH_2)$_{2-5}$$NH_2$, -CO-NH-($CH_2$)$_{2-5}$NH-($CH_2$)$_z$-H, -CO-NH($CH_2$)$_{2-5}$$NR_{15}$($CH_2$)$_z$-H, -CO-R', -CO-OR', -CO-SR', -CO-N(R')$_2$, -CO-CO-R', -CO-CS-R', -CO-CO-OR', -CO-CS-OR', -CO-CO-SR', -CO-CS-SR', -CO-CO-N(R')$_2$, -CO-CS-N(R')$_2$, -NH-CO-NH-(CH_2)$_{2-5}$$NH_2$, -NH-CO-NH-($CH_2$)$_{2-5}$NH-($CH_2$)$_z$-H, -NH-CO-NH($CH_2$)$_{2-5}$$NR_{15}$($CH_2$)$_z$-H, -NH-CO-R', -NH-CO-OR', -NH-CO-SR', -NH-CO-NO_2, -NH-CO-N(R')$_2$, -NH-CO-CO-R', -NH-CO-CS-R', -NH-CO-CO-OR', -NH-CO-CS-OR', -NH-CO-CO-SR', -NH-CO-CS-SR', -NH-CO-CO-N(R')$_2$, and -NH-CO-CS-N(R')$_2$,

wherein each R' is (CH_2)$_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20}) aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, and an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

wherein X is a group having the following formula;

$-(CH_2)_m-Y-(CH_2)_n-$

wherein Y is selected from the group consisting of S, N, and O;

wherein m and n, independent of one another, are integers of 0-5; and,

instructions for using the compound to treat a subject having a calcium channel blocking disorder;

wherein the package housing further comprises a second container containing a medicament for the treatment of hypertension, other than the compound, and wherein the instructions are for using the compound and the medicament to treat hypertension.

52-54. (Canceled).

55. (Not entered) The method of claim 43 wherein the medicament is a sodium channel blocker selected from the group consisting of quinidine, procainamide, disopyramide, moricizine, lidocaine, mexiletine, phenytoin, tocainide, encainide, flecainide, propafenone and indecainide.

56. (Not entered) The method of claim 43 wherein the medicament is a β-adreneric blocker selected from the group consisting of propranolol, acebutolol and esmolol.

57. (Not entered) The method of claim 43 wherein the medicament is a compound that prolongs repolarization selected from the group consisting of amiodarone, bretylium, sotalol, Acebutol, Acecaine, Adenosine, Ajmaline, Alprenolol, Amiodarone, Amoproxan, Aprindine, Arotinolol, Atenolol, Bevantolol, Bretylium Tosylate, Bubumolol, Bufetolol, Bunaftine, Bunitrolol, Bupranolol, Butidrine Hydrochloride, Butobendine, Capobenic Acid, Carazolol, Carteolol, Cifenline, Cloranolol, Gallopamil, Indenolol, Ipratropium Bromide, Lorajmine, Lorcainide, Meobentine, Metipranolol, Mexiletine, Nifenalol, Oxprenolol, Penbutolol, Pindolol, Pirmenol, Practolol, Prajmaline, Pronthalol, Pyrinoline, Quinidine Sulfate, Quinidine, Sotalol, Talinolol, Timolol, Tocainide, Verapamil, Viquidil and Xibenolol.